

## AMENDMENT

### IN THE CLAIMS:

Please amend the claims as follows:

1. (Canceled)
2. (Currently amended) The substrate processing apparatus according to ~~claim 8~~ claim 10, wherein  
the object is at least a part of a processing vessel in which a substrate received therein is processed.
3. (Original) The substrate processing apparatus according to claim 2, wherein  
the substrate is processed in the processing vessel with the use of a plasma.
4. (Original) The substrate processing apparatus according to claim 3, further comprising a heater that heats the object, at least when no plasma is generated.
5. (Original) The substrate processing apparatus according to claim 2, further comprising a heating furnace that receives the processing vessel, wherein  
the mist passage is formed as a space defined between the processing vessel and the furnace.
- 6-9. (Canceled)
10. (Currently amended) A substrate processing apparatus for processing a substrate for manufacturing a semiconductor device, comprising an object to be cooled, the apparatus further comprising:  
a mist generator that generates a mist;

a carrier-gas supply source that supplies a carrier gas for carrying the mist generated in the mist generator;

a mist passage through which the mist carried by the carrier gas flows to cool the object;  
and

a gas-liquid separator that separates the mist circulated in the mist passage from the carrier gas, and collects the separated mist as a liquid,

wherein

the gas-liquid separator has a plurality of fins to form a meandering passage, and

the mist generator generates the mist from the liquid collected by the separator.